

AUSTRALASIAN CERATOPOGONIDAE (DIPTERA, NEMATOCERA)

PART XIV: THE GENUS *SERROMYIA* MEIGEN

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(15 Text-figures)

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Synopsis

The genus *Serromyia* Meigen has not previously been recorded from the Australia-New Guinea area. In this paper a new species of the genus is described from Australia.

Genus *SERROMYIA* Meigen

Serromyia (Megerle, MS, in) Meigen, 1818, Syst. Besch. Eur. Zweifl. Ins., 1: 83. (Genotype: *Ceratopogon femoratus* Meigen, monobasic.) *Prionomyia* Stephens, 1829, Cat. Brit. Ins., 2: 237. *Ceratolophus* (part) Kieffer, 1899 (*nec* Barboza de Bocage, 1873), *Bull. Soc. ent. France*, p. 69. *Johannseniella* Williston, 1907, *J. N.Y. ent. Soc.*, 15: 1 (*nom. nov.* for *Ceratolophus* K., *nec* Barboza de Bocage).

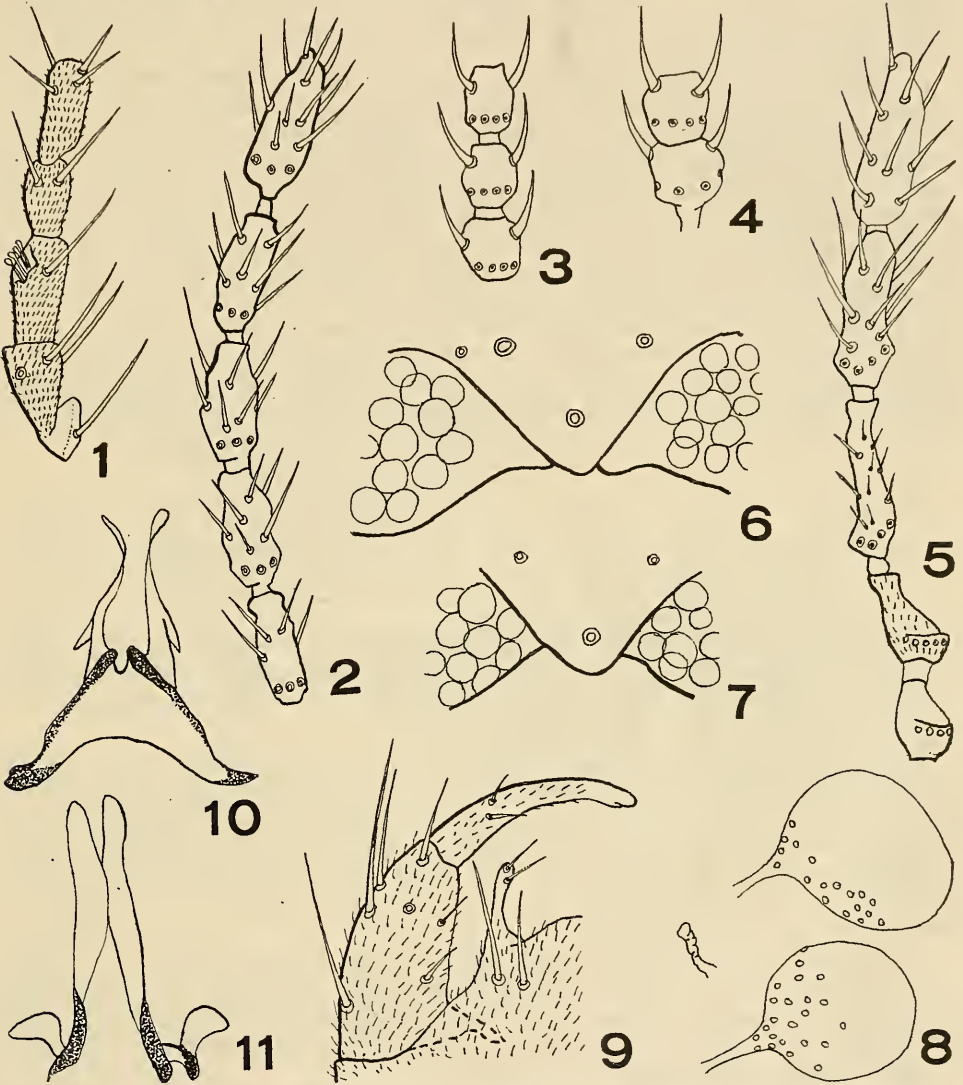
Diagnosis (modified from Wirth, 1952): Body slender, rather bare. Eyes bare. Female antennae with distal five segments elongate, male antennae with distal three segments elongate, with a distinct antennal plume. Scutum without anterior tubercle, with fine bristles arranged mostly in dorsocentral and acrostichal series; humeral pits not developed. Fore and mid legs slender, unarmed [or fore and mid femora with 3-6 spines (e.g. ♂ *S. europaea*, Clastrier, 1963, ♂ *S. atra* (Meigen), 1818, ♂ *S. nitens* Goetghebuer, 1920); fore femur with 1-5 spines (e.g. *S. albitarsis* Kieffer, 1919), *S. spinosipes* Kieffer, 1919, and sometimes *S. micronyx* Kieffer, 1919); fore femur and tibia with 2 or more spines (e.g. ♂ *S. nocticolor* Kieffer, 1914); *S. bispinosa* Goetghebuer, 1936); fore femur and fore and mid tibia with several spines (♂ *S. femorata* (Meigen), 1804); mid tibia with 1 spine (*S. reyei* n. sp.)], hind femur swollen, with numerous ventral spines, hind tibia slender, curved basally; fore and mid fourth tarsal segments cordate [but nearly cylindrical in *S. reyei* n. sp.], hind fourth tarsal segment cylindrical. Claws of female paired and equal on fore and mid legs, hind claw usually single, very long, occasionally paired and equal, claws of male all paired and equal; empodium absent. Wing with fine microtrichia, occasionally a few macrotrichia at apex; costa to two-thirds of wing length; two anterior radial cells, second not much longer than first; crossvein r-m nearly vertical; intercalary fork not evident, median fork sessile or with short stalk [but with a long stalk in *S. esakii* Tokunaga, 1940 and *S. reyei*, n. sp.], M_2 not interrupted at base [or broadly interrupted at base in *S. aethiopiae* Clastrier and Wirth, 1961, *S. esakii* Tokunaga and *S. reyei* n. sp.]; anal vein bent just beyond middle, an indistinct fold arising from bend; alula bare. Male genitalia with ninth sternite transverse; tergite conical, with anal lobes prominent; coxites stout, styles long and slender; aedeagus with basal arms widespread, apex slender; parameres bent in middle, with rather blunt apices.

This genus belongs in the *Stilobezzia* group of Lee (1948) = the tribe Stilobezziini of Wirth (1952).

SERROMYIA REYEI, n. sp.

A medium-sized, mainly brown species. (All measurements are in millimetres.)

Female: Length 1.90 mm., wing 0.97×0.39 mm.



Figs. 1-11. *Serromyia reyei* n. sp. 1, ♀ maxillary palp, $\times 230$; 2, ♀ antennal segments XI-V, $\times 230$; 3, ♀ antennal segments VIII-X, $\times 230$; 4, ♀ antennal segments III-IV, $\times 230$; 5, ♂ antennal segments XI-V, $\times 230$; 6, ♀ vertex, $\times 230$; 7, ♂ vertex, $\times 230$; 8, ♀ spermathecae, $\times 230$; 9, ♂ coxite, style and part of ninth tergite; $\times 230$; 10, ♂ aedeagus, $\times 230$; 11, ♂ parameres, $\times 230$.

Head dark brown, paler at vertex, frons yellowish, clypeus and proboscis brown, proboscis half the height of the head. Eyes bare, broadly separated (Fig. 6). Mandibular teeth 7-8. Palp (Fig. 1) light yellowish brown, segment III slightly swollen, with a large preapical sensory pit bearing several long sensillae, palpal ratio 2.0.

Palpal segment	..	I	II	III	IV	V
Length	..	0.022	0.041	0.045	0.030	0.049

Antennal segment II dark brown, flagellar segments light brown, segment III not much larger than succeeding segment, segments IV-X short, stout,

barrel-shaped, segments XI–XV not very elongate, all segments with a basal verticel, segment XV with a stiff apical bristle (Figs 2–4).

Antennal segment	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
Length	0.034	0.022	0.024	0.024	0.026	0.026	0.026	0.028	0.045	0.045	0.049	0.049	0.060

Scutum dark brown dorsally but narrowly yellow posteriorly, slightly lighter brown laterally except for humeral areas and a median dorsoventral band, which are dark brown, scutellum slightly fuscous centrally, yellow laterally, with 4 large and 6 small setae, postscutellum dark brown, pleuron lighter brown. Coxae, trochanters, femora and tibiae brown, the hind pair darker, fore femur with an indistinct yellowish-brown area extending dorsally from the centre to near the apex, mid femur slightly yellowish in the same area, fore and mid tibiae paler than femora, especially on apical half, hind tibia slightly paler at apex, mid tibia with a short, strong apical spine, hind femur (Fig. 13) swollen, with about 20 strong ventral spines, hind tibia slightly curved basally, hind tibial comb of six spines; tarsi whitish, but segment V slightly fuscous, tarsal spines: for I with 1 basal, 1 apical, II–III with 1 apical; mid I with 1 basal, 2 ventral, 2 apical, II–III with 2 apical; hind I with 1 basal, 1 apical, II–III with 1 apical.

Leg Segment :	Femur	Tibia	Tarsus					Tarsal Ratio
			I	II	III	IV	V	
Length : Fore ..	0.390	0.375	0.159	0.091	0.038	0.041	0.049	1.75
Mid ..	0.465	0.427	0.235	0.121	0.072	0.045	0.072	1.94
Hind ..	0.555	0.427	0.209	0.106	0.079	0.064	0.087	1.96

Claws of fore and mid legs small, paired, equal, each with a small basal tooth, the claws 0.7 and 0.4 as long as the respective fifth tarsal segments, claw of hind leg single, 1.4 times the length of the fifth tarsal segment, with a fine basal tooth about $\frac{1}{4}$ the length of the claw.

Wing membrane very pale, microtrichia inconspicuous, macrotrichia absent; veins whitish, difficult to distinguish; dark bristles on costa, radius and R_{4+5} . Venation (Fig. 12): costa short, ending at level of end of M_{3+4} , costal ratio 0.69; first radial cell narrow, linear, second broader, lengths of first and second radial cells 0.121 and 0.167 mm. respectively; base of M_2 indistinct, but M_{1+2} apparently quite long, slightly longer than r-m; $FmCu_1$ level with r-m. Haltere white.

Abdomen very pale brown, with a darker brown pattern (Fig. 14); cerci brown. Spermathecae (Fig. 8) three, two large, oval, with long chitinized necks and hyaline punctures on the surface, 0.070×0.057 mm. with neck 0.022 mm. and 0.060×0.054 mm. with neck 0.026 mm., and one vestigial, tubular, 0.022×0.005 mm.

Male: Length 1.54 mm., wing 1.00×0.33 mm.

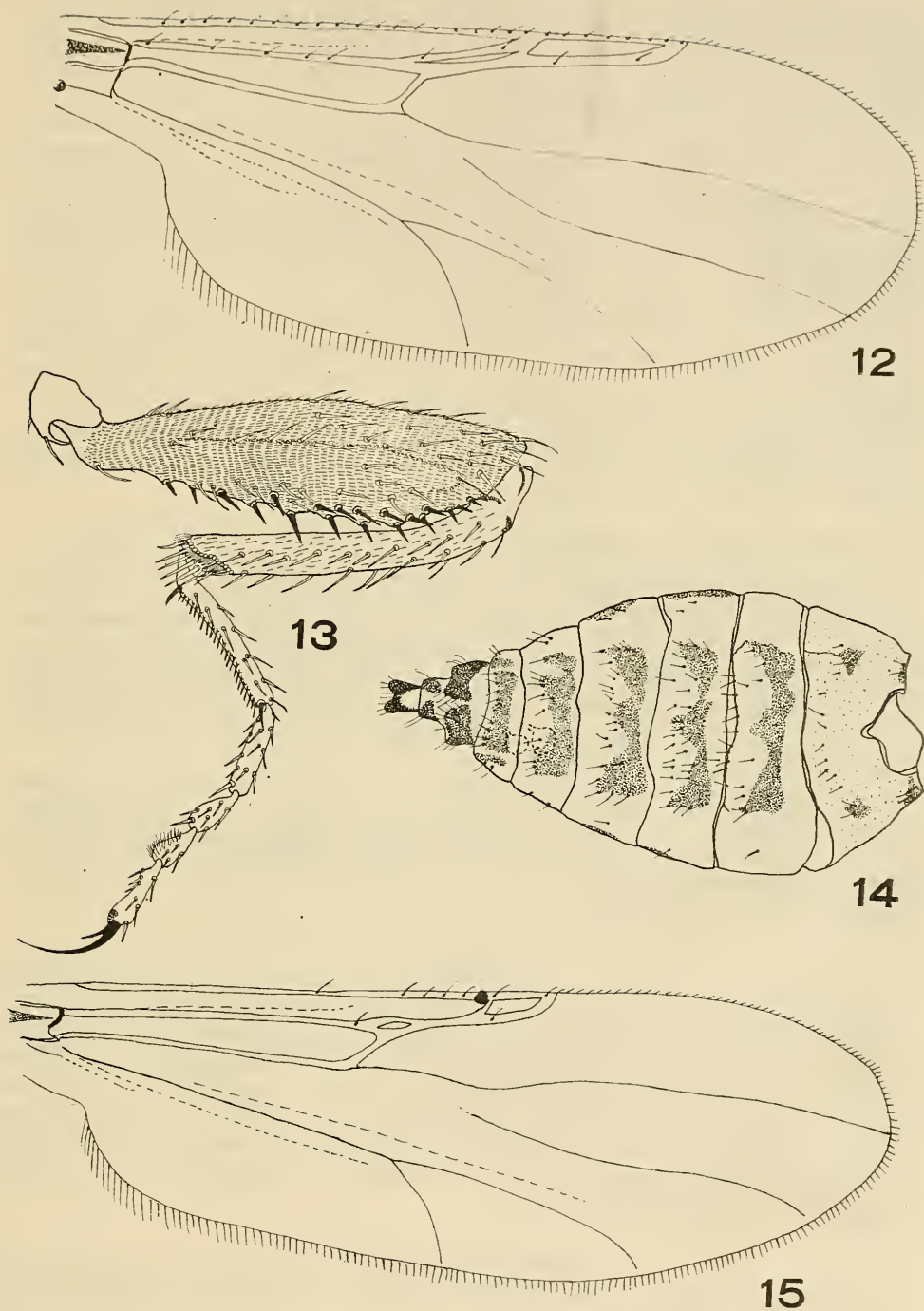
Generally similar to female in appearance, with the following differences:

Eyes more broadly separated (Fig. 7). Relative lengths of palpal segments differ slightly.

Palpal segment	I	II	III	IV	V
Length	0.019	0.045	0.045	0.028	0.041

Antennal segments XIII–XV slightly elongated, segments XIII–XIV with a basal verticel, antennal plume brown (Fig. 5.)

Antennal segment	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
Length	0.087	0.034	0.034	0.034	0.030	0.030	0.030	0.034	0.038	0.045	0.064	0.064	0.068



Figs. 12-15. *Serromyia reyei* n. sp. 12, ♀ wing, $\times 115$; 13, ♀ hind leg, $\times 115$; 14, ♀ abdomen, $\times 55$; 15, ♂ wing, $\times 115$.

Thorax and legs as in female, except hind femur with fewer (15-16) ventral spines, all fourth tarsal segments nearly cylindrical, tarsal ratios of fore, mid and hind legs 1.80, 1.97 and 1.79 respectively, claws of all legs equal, simple, in fore and mid legs just under $\frac{1}{2}$, and in hind legs just under $\frac{1}{3}$, the length of the fifth tarsal segment.

Wing (Fig. 15) relatively longer and narrower than in female. Venation: costa very short, ending halfway between the ends of $M_{3,4}$ and Cu_1 , costal ratio 0.60; first radial cell very small, almost completely closed, second radial cell broader, very short, the two radial cells separated for some distance by the fusion of the veins between them, lengths of first and second radial cells 0.045 mm. and 0.076 mm. respectively; base of M_2 indistinct, but $M_{1,2}$ apparently very long; $fMCu_1$ below r-m.

Proximal half of abdomen light brown, distal half darker brown, anterior and posterior edges of segments whitish, tergites without a distinct pattern. Hypopygium (Figs 9-11) brown, styles paler brown, slightly longer than coxites, aedeagus mainly membranous, parameres rodlike, chitinized.

The degree of closure of the first radial cell and the extent of fusion of the veins between the first and second radial cells in the male wing is variable, in some specimens little or no fusion occurring.

Types: Holotype ♀, allotype ♂ and 41 ♂ ♂ and 15 ♀ ♀ paratypes.

Type locality: Darwin, Northern Territory (*holotype* and 2 ♀ ♀ *paratypes* from R.A.A.F. Marine Sect., 25-26. xi.1957, N.J. light trap, E. J. Reye; *allotype*, with 37 ♂ ♂ and 1 ♀ *paratypes*, from Sadgroves Cr., Jindiji Road, over gravel, 30.x.1957, 1600 hrs., net, E. J. Reye; 3 ♂ ♂ and 10 ♀ ♀ *paratypes* from Quarantine Stn., 26-27, 30-31.x.1957, 1-2, 2-3, 22-23. xi.1957, N.J. light trap, E. J. Reye; 1 ♀ *paratype*, 18.xi.1952, E. J. Reye; 1 ♂ *paratype*, from *Avicennia*, 6.xi.1957, 1715 hrs., E. J. Reye; 1 ♀ *paratype*, from crab hole, Gravelly Pt., 9-10. vi.1958, E. J. Reye).

The holotype and allotype are lodged in the School of Public Health and Tropical Medicine, University of Sydney. Paratypes are in S.P.H.&T.M.; United States National Museum, Washington; British Museum (Natural History); Australian National Insect Collection, Canberra, A.C.T.; B. P. Bishop Museum, Honolulu.

DISCUSSION

Although this genus is at present known to occur in all zoogeographic regions except the Neotropical, by far the greatest number of described species are European, with a much smaller number of African and North American species. It is very poorly represented in Asia and the Pacific, and I have only been able to locate two previously described species from this area, *Serromyia pendleburyi* Macfie from Malaya and *S. esakii* Tokunaga from the Caroline and Marshall Islands. This distribution would suggest that *Serromyia* was originally a northern hemisphere genus, but is gradually extending its range southward.

DIFFERENTIATION OF SPECIES

Serromyia reyei is distinguished from the only known geographically close species as follows:¹

¹ Whether or not the distribution of Ceratopogonidae conforms to the accepted subregional divisions of the Pacific area is a question which would best be left until current revisions of the Australian and Malayan fauna are completed.

1. *S. pendleburyi* Macfie, 1934 (Malaya—described from male only). Much larger, wing 2.6 mm. long. Coloration darker, head almost black, palp dark brown, scutum entirely black, abdomen dark brown. Mid tibia lacking apical spine. Costal ratio nearly 0.75, petiole of media shorter, equal to cross-vein. Ninth tergite very long, longer than coxite, with larger apical processes. Aedeagus with a much deeper basal arch, distal process of aedeagus single, very short and broad, tapering to a point, parameres similar in form to those of *reyei*, but completely separate.

2. *S. esakii* Tokunaga, 1940 (Caroline and Marshall Islands). Paler in colour, head and thorax yellowish, abdomen completely, or almost completely, white. Legs entirely brown. Ninth tergite longer than coxite, narrow. Aedeagus without basal arch, median lobe thinly chitinized, accessory processes short, swollen preapically, parameres separate, with recurved, pointed apices.

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